DOE/SNF/Trend-001
Rev. 1

United States Department of Energy

National Spent Nuclear Fuel Program

Quality Assurance Program Annual Trending Report

January–December 2005

February 2006

U.S. Department of Energy
Assistant Secretary for Environmental Management
Office of Nuclear Material and Spent Fuel

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National Spent Nuclear Fuel Program Quality Assurance Program Annual Trending Report

January–December 2005

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SUMMARY

The 2005 National Spent Nuclear Fuel Program (NSNFP) trend report documents the analysis of Quality Assurance (QA) deficiencies for the identification of trends adverse to quality in the NSNFP. The scope of the analysis covers the NSNFP and NSNFP supplier deficiency reports that were generated between January 2002 and December 2005. The January 2002 date signifies the time when the current NSNFP Quality Program and Document Manual was established.

Deficiencies are identified as Deficiency Reports (DRs), Corrective Action Requests (CARs), or a deficiency corrected during an audit (CDA). The DRs/CARs/CDAs are tracked in the NSNFP QA Corrective Action Tracking Trending System database. The deficiency data for this reporting period were categorized and evaluated for emerging trends. There were no deficient trends requiring management action that were identified as a result of this analysis.

NSNFP

During 2005, four NSNFP deficiency reports were generated. These deficiencies were identified and corrected during assessments (CDAs). The 2005 NSNFP internal audit (05-NSNF-AU-001) resulted in two CDAs. The 2005 external EM/RW audit (05-DOE-AU-001) of the NSNFP resulted in two condition reports that were closed during the audit and regarded as CDAs. For the purpose of this trend report, the four CDAs were grouped together to perform the trending analysis of the overall NSNF Program.

The evaluation of NSNFP data showed a steady decline in number of deficiencies from 15 in 2002, to 11 in 2003, to 10 in 2004, to 4 (all CDAs) in 2005. The Pareto analysis showed that 2 of 4 conditions were attributed to the QA auditing process due to oversight in generating the assessment team member forms. There are no significant increasing trends for 2005. There were no CARs issued during 2005, and there were no open DRs at the end of 2005.

NSNFP Suppliers

During 2005, the only active government sector supplier to the NSNFP was the Idaho National Laboratory Management and Operations contractor Battelle Energy Alliance. There was one DR related to the materials and testing equipment service provider using equipment with an expired calibration date. There was no adverse impact and the machine was verified to have been calibrated before and after the material tests performed for the NSNFP.

Additional Oversight Activities

Representatives from DOE, Office of Environmental Management (EM) and Office of Civilian Radioactive Waste Management (RW) performed a joint (EM/RW) compliance-based audit (05-DOE-AU-001) of NSNFP and identified two condition reports (CRs) that were closed during that assessment. The two CRs were included in the NSNFP trending analysis. The EM/RW generated CRs represent different examples of NSNFP record generation and procedure implementation deficiencies that have since been corrected. There were no adverse trends when compared with the other NSNFP deficiencies from 2005.

CONTENTS

ACRONYMS

BEA	Battelle Energy Alliance
CAR	Corrective Action Request
CATTS	Corrective Action Tracking Trending System
CDA	Corrected During Audit
CR	Condition Report
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
DR	Deficiency Report
EDF	engineering design file
EM	Office of Environmental Management
INL	Idaho National Laboratory
NSNFP	National Spent Nuclear Fuel Program
PSO	Program Support Organization
QA	quality assurance
QAS	Quality Assurance Staff
QARD	Quality Assurance Requirements and Description
RW	Office of Civilian Radioactive Waste Management
SNF	spent nuclear fuel

National Spent Nuclear Fuel Program Quality Assurance Program Annual Trending Report

1. INTRODUCTION

1.1 Purpose and Scope

The 2005 National Spent Nuclear Fuel Program (NSNFP) trend report documents the analysis of quality assurance (QA) deficiencies for the identification of trends adverse to quality in the NSNFP. The scope of the 2005 NSNFP trend report includes the NSNFP and NSNFP supplier deficiency reports (DRs) that were issued between January 2002 and December 2005. The January 2002 date signifies the time when the current NSNFP Quality Program and Document Manual was implemented.

The analysis performed meets the requirements set forth in Section 16.2.6, "Quality Trending" of DOE/RW-0333P, *Quality Assurance Requirements and Description* (QARD). The trend analysis was performed in accordance with NSNFP Procedure 16.03. The results are presented in the following sections.

1.2 Description of Trending Process and Methodology

Deficiencies are categorized as conditions adverse to quality and significant conditions adverse to quality, and are documented as a Deficiency Report (DR) or Corrective Action Request (CAR), respectively. A deficient condition identified and corrected during an assessment is categorized as a CDA. These conditions are included in the trending analysis process in the same manner as a DR. The DRs/CARs are assigned subject codes and direct cause codes. Significant conditions adverse to quality that are documented as CARs are also assigned a root cause code, based on formal root cause analysis. Codes are recorded in the NSNFP QA Corrective Action Tracking Trending System (CATTS) to facilitate analysis. The codes are sorted by calendar year into two groups: the NSNFP, and the suppliers to the NSNFP. Any identified deficiencies from external assessments of the NSNFP, such as those performed by the Office of Environmental Management/Office of Civilian Radioactive Waste Management (EM/RW) audit team, were combined with the NSNFP reports for analysis and trending. Other sources of information are also used for analysis to identify trends adverse to quality. Previous NSNFP QA trend analysis reports are used in the analyses.

Subject codes are assigned to DRs or CARs that reflect the primary QARD requirement that is violated. Direct cause codes are the apparent cause of a condition adverse to quality. Root cause codes reflect the identified root cause that results from formal analysis. The first two codes, subject and direct cause, are subjective and are validated by review of the DRs/CARs during analysis. Root cause codes reflect the results of formal analysis and do not require validation.

Subject codes, direct cause codes, and root cause codes are used to compare the frequency of occurrence of like deficiencies. Codes are sorted by organization for each calendar year to identify an increase in the frequency of occurrence over time. Where an increase in frequency is identified, each individual DR/CAR is evaluated to ensure that common issues are identified, and to determine if an adverse trend is present.

Subject codes and direct cause codes are evaluated by Pareto analysis for each organization within a respective group. This analysis identifies the most frequent occurrence of deficiency codes. DRs/CARs are evaluated for the highest occurrence of a code to ensure that common issues are identified.

The highest occurrence of a code that reflects a common issue may represent an indicator of an adverse trend.

The DRs/CARs are evaluated for timeliness of corrective action, including (as applicable) a discussion of ineffective or overdue corrective actions for each organization. The duration of closed and open DRs/CARs are compared by calendar year to determine if an adverse trend in timeliness of corrective action is present.

Potential adverse trends are evaluated against the criteria for trends adverse to quality in NSNFP Procedure 16.03, "Quality Assurance Trending." If the analysis finds the trend to be adverse to quality, then a review of open and recently completed corrective actions is performed to determine whether mitigating actions are in process that may resolve the adverse trend. If there are no mitigating actions, then an evaluation of the trend for a significant condition adverse to quality is performed to determine whether a CAR will be issued to the responsible organization.

The discussion for each organization includes a description of documentation used as a part of the analysis, evaluations of selected subject and direct cause codes, and conclusions regarding trends adverse to quality. Appendix A provides tables that summarize the subject codes, direct cause codes, and root cause codes. In addition, Appendix A presents the figures used in the Pareto analyses to identify the most frequent occurrence of subject and direct cause codes. Appendix B shows figures for the timeliness of DR closure through December 31, 2005. Appendix C lists the DRs, CARs, and Conditions Corrected during Audit (CDAs) that were analyzed for this trending report. Appendix D lists the codes used for both direct and root causes. Administrative controls that may address adverse trends, lack of timely corrective action, or indicators for adverse trends are discussed. Conclusions that require action by management are identified under the Executive Summary and Results.

2. ANALYSIS

2.1 National Spent Nuclear Fuel Program

The NSNFP is composed of a Program Support Organization (PSO) and a Quality Assurance Staff (QAS) organization. The DRs are assigned to each organization recognizing unique responsibilities. However, the analysis evaluated the data as representative of one organization.

During 2005, four CDA deficiency reports were identified that applied to the NSNFP and closed during the assessments. The 2005 NSNFP internal audit (05-NSNF-AU-001) resulted in two CDAs. The 2005 external EM/RW audit (05-DOE-AU-001) of the NSNFP resulted in two condition reports that were closed during the audit and regarded as CDAs. For the purpose of this trend report, the four CDAs have been grouped together to perform the trending analysis of the overall NSNF Program. As of December 31, 2005, there were no open DRs.

2.1.1 Subject Codes

Appendix A sorts the subject codes for the NSNFP by calendar year. The results indicate an overall improvement in QA program implementation from 2002 through 2005. The number of deficiencies declined from 15 in 2002, 11 in 2003, 10 in 2004, to 4 (all closed during assessment) in 2005. The distribution of subject codes presented in the Pareto figure shows that 2 of the 4 CDAs (50%) from 2005 were associated with audits as the most frequent occurrence. The Subject Code R, “Audits,” was identified in two DRs as described below.

Subject Code

The frequency of occurrence of deficiencies under Subject Code R, “Audits,” was zero from 2002 to 2004, then increased to two CDAs in 2005.

- Deficiency report 05-NSNF-AU-001-CDA-002 describes a condition that was identified and corrected during the internal NSNFP audit (05-NSNF-AU-001). The nature of the deficiency was that several checklists (items 17, 18 and Supplements I and III) for audit 04-NSNF-AU-001 were not signed and dated by the performer. This condition was brought to the attention of NSNFP management. The subject auditor, who used the checklists, signed the checklist pages within the record package. There was no adverse impact.

- Condition report NSNFP (EM)-05-D-027 describes a condition that was identified and corrected during the external EM/RW audit (05-DOE-AU-002). The nature of the deficiency was that several QA assessment record packages were found to contain incomplete assessment team member forms. This condition was brought to the attention of NSNFP management. NSNFP QA personnel corrected the subject forms and submitted them to QA records. There was no adverse impact.

Evaluation

Evaluation of the DRs under Subject Code R identified problems with consistently generating the assessment team member forms. There was no adverse impact, because the NSNFP QAS personnel qualification records show that the assessment team members were qualified as auditors (or lead auditors) to perform the assigned tasks.

The lead assessor used the forms to verify that the assessment team members were qualified to perform their assigned tasks, especially for those personnel external to the NSNFP QA Program. The NSNFP QA staff has been counseled on attention to detail for record generation. This area should continue to be monitored for effectiveness.

2.1.2 Direct Cause Codes

Appendix A sorts the direct cause codes for the NSNFP by calendar year. The evaluation indicated an overall improvement in QA program implementation from 2002 through 2005. The direct causes for four DRs attributed to the NSNFP were due to the direct cause category of Personnel Error.

Direct Cause Code 02A, Personnel Error—Lack of Attention to a Task

- Deficiency Report 05-NSNF-AU-001-CDA-001 identified that an assessment team member form was not included with the QA record package (04-NSNFP-S-007). The lead assessor completed the form and submitted it to QA records. This condition was identified and corrected during the assessment (05-NSNF-AU-001).

- Deficiency Report 05-NSNF-AU-001-CDA-002 identified that several auditor checklists were not signed within the QA record package (04-NSNF-AU-001). The lead assessor obtained the signatures and dates on the QA record package. This condition was identified and corrected during the assessment (05-NSNF-AU-001).

- Condition report NSNFP (EM)-05-D-027 was identified by the DOE EM/RW audit team (05-DOE-AU-002). The nature of the deficiency was that several QA assessment record packages were found to contain incomplete assessment team member forms. This condition was brought to the attention of NSNFP management. NSNFP QA personnel corrected the subject forms and submitted them to QA records. There was no adverse impact.

- Condition report NSNFP (EM)-05-D-028 was identified by the DOE EM/RW audit team (05-DOE-AU-002). The nature of the deficiency was that acceptance of four supplier deliverables were not formally documented by the NSNFP. This condition was brought to the attention of NSNFP management. NSNFP prepared the correspondence showing supplier concurrence and submitted the documentation to QA records. There was no adverse impact.

Evaluation

Evaluation of Direct Cause Code 02A, *Personnel errors related to the lack of attention to detail,* showed slight downward trends (6 in 2002, 5 in 2003, 7 in 2004, and 4 in 2005). Various process improvements and changes to implementing procedures have been instituted. The personnel errors have not resulted in any adverse impacts to the NSNFP Quality Program. The number of personnel errors associated with generating, transmitting and storing records has declined. Personnel attention to detail will continue to be monitored for effectiveness.

2.1.3 Root Cause Codes

The evaluation of root cause codes for the NSNFP indicates an overall improvement in QA program implementation. There were no significant conditions adverse to quality identified during 2003 to 2005. No adverse trends are identified from this analysis. No further action is required as a result of this evaluation.

2.1.4 External Oversight of the NSNFP

DOE EM/RW conducted a compliance-based audit (05-DOE-AU-001) of the NSNFP. The audit team identified two Condition Reports (NSNFP (EM)-05-D-027 and 028) described above and included with the NSNFP analysis.

Evaluation of these two CRs from the EM/RW audit did not identify any adverse trends when compared with the other NSNFP DRs from 2005. The CRs represent different examples of record generation and procedure implementation deficiencies that have since been corrected.

2.2 National Spent Nuclear Fuel Program Suppliers

During 2005, the only active government sector supplier to the NSNFP was the Idaho National Laboratory (INL) Management and Operations contractor, Battelle Energy Alliance (BEA). The NSNFP audit of the BEA supplier (05-SUPP-AU-002) resulted in one CDA. There were no adverse trends or impacts when compared with the other NSNFP DRs from 2005.

- Deficiency Report 05-SUPP-AU-002-CDA-001 identified that the calibration date expired (by 1 day) for calibrated equipment used to conduct material tests. At the time of the audit, there was no evaluation documented to show that the equipment remained within tolerance at the time of testing. This condition was brought to the attention of NSNFP management and the point of contact with the INL supplier. The INL supplier provided evidence that the equipment was calibrated before and after testing and remained in tolerance with no adjustments necessary. This condition was identified and corrected during the assessment (05-SUPP-AU-002). The direct cause was attributed to personnel oversight. There was no adverse impact.

3. CORRECTIVE ACTION TIMELINESS

The DRs/CARs were evaluated for timeliness of corrective action. Data for NSNFP PSO, NSNFP QAS and NSNFP suppliers were evaluated by calendar year to determine if an adverse trend in timeliness of corrective action is present. The CDAs were not included in the computed average, because the CDAs are singular incidents that are closed during the assessment, resulting in zero days for closure.

Overall performance has improved in providing timely corrective action. The NSNFP QA Support organization tracks and reports on a biweekly basis a summary report of all open DRs. During calendar year 2005, the timeliness of corrective action closure was exactly zero because the five CDAs were identified and corrected during the assessments.

Appendix B presents figures for showing the timeliness of DR closure as of December 31, 2005. There were no open reports.

3.1 National Spent Nuclear Fuel Program

The NSNFP is composed of the PSO and QAS organizations. The two groups work to the same program management procedures. However, data were sorted to evaluate the individual organization duration. The figures in Appendix B show both the NSNFP PSO and QA Support organizations have improved their timeliness in reducing the average number of days to close DRs.

The average closure time for NSNFP PSO deficiency reports declined from 164 days in 2002, to 88 in 2003, to 49 in 2004, and dropped to zero in 2005 for one CDA that was attributed to the NSNFP supplier. The evaluation of data shows significant improvement in the reduced number of deficiencies and average timeliness of closure.

The average closure time for NSNFP QAS deficiency reports showed an overall decline from 117 days in 2002, to zero deficiencies in 2003, rising to 104 days in 2004, and dropping to zero days for four CDAs in 2005. The evaluation of data shows significant improvement in the reduced number of deficiencies and average timeliness of closure.

3.2 National Spent Nuclear Fuel Program Suppliers

During 2005, the INL supplier qualification audit 05-SUPP-AU-002 identified one condition adverse to quality that was closed during the assessment. As no time elapsed, the timeliness of corrective action closure was zero.

4. RESULTS

Data for the NSNFP and NSNFP suppliers were analyzed to identify organization-specific adverse trends. Subject codes, direct cause codes, root cause codes, and timeliness of corrective action completion were evaluated. The analysis of increases in frequency of codes, highest frequency of codes, and corrective action duration resulted in the identification of potential adverse trends in the NSNFP PSO and QAS organizations. The analysis identified the following results. There were no deficient trends requiring management attention that were identified as a result of this analysis.

NSNFP

The evaluation of NSNFP data showed a steady decline in number of deficiencies from 15 in 2002, to 11 in 2003, to 10 in 2004, to 4 in 2005 (all CDAs). The Pareto analysis showed that 2 of 4 deficiencies in 2005 (50%) were attributed to the Audit process, primarily in the area of assessment team member forms. There are no significant increasing trends. The timeliness of DR closure continued to improve.

Areas for Improvement

- Evaluation of Direct Cause Code 02A, *Personnel errors related to the lack of attention to detail,* showed slight downward trends (6 in 2002, 5 in 2003, 7 in 2004, and 4 in 2005). Various process improvements and changes to implementing procedures have been instituted. The personnel errors have not resulted in any adverse impacts to the NSNFP Quality Program. The number of personnel errors associated with generating, transmitting and storing records has declined. Personnel attention to detail will continue to be monitored for effectiveness.

National Spent Nuclear Fuel Program Suppliers

During 2005, the only active government sector supplier to the NSNFP was the INL under contractor BEA. There was one DR related to the measuring and test equipment service provider using equipment with an expired calibration date. There was no adverse impact and the machine was verified to be calibrated before and after the material tests.

Additional Oversight Activities

An EM/RW audit team (05-DOE-AU-002) audited the NSNFP and identified two CRs related to incomplete assessment team member forms and acceptance of NSNFP supplier deliverables. The CRs were identified and closed during the audit. There was no adverse impact.

5. BIBLIOGRAPHY

1. National Spent Nuclear Fuel Quality Program Annual Trending Report, January–December 2000.

2. National Spent Nuclear Fuel Quality Program Annual Trending Report, January–December 2001.

3. National Spent Nuclear Fuel Quality Program Annual Trending Report, January–December 2002.

4. National Spent Nuclear Fuel Quality Program Annual Trending Report, January–December 2003.

5. National Spent Nuclear Fuel Quality Program Annual Trending Report, January–December 2004.

6. Memo from P. M Golan, DOE EM, to E. Sellars, DOE-ID, "Issuance of Audit Report No. 05-DOE-AU-001 for the Department of Energy Idaho Operations Office National Spent Nuclear Fuel Program," March 29, 2005.

Appendix A

Deficiency Reports Sorted by Subject and Cause Codes

Appendix A

Deficiency Reports Sorted by Subject and Cause Codes

NSNFP (PSO and QAS) Subject Code

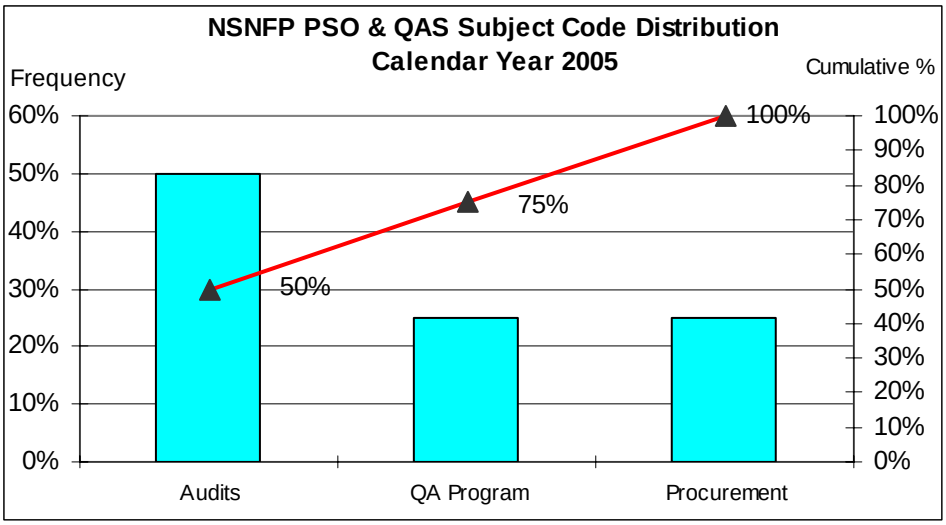
Subj. Code	Title	CY02	CY03	CY04	CY05
A	Organization	2	0		
B	QA Program	3	2	6	1
C	Design	0	1		
D	Procurement	0	5		
E	Implementing Documents	1	1	2	
F	Doc Control	1	1		
G	Purchased items	3	0		1
J	Inspection				
K	Test	1			
P	Corrective Action	2	0		
Q	Records	0	1	2	
R	Audits	0	0		2
S	Software	0	0		
U	Scientific investigation	1			
V	Electronic Data Mgt	1			
	TOTAL	**15**	**11**	**10**	**4**

NSNFP (PSO and QAS) Direct Cause Code

Direct cause	Title	CY02	CY03	CY04	CY05
1	01-Procedures	6	3	1	
2	02-Personnel	6	5	7	4
3	03-Management	3	1	1	
4	04-Training		1		
5	05-Design		1	1	
8	08-Software				
10	10-Misc.				
	TOTAL	**15**	**11**	**10**	**4**

NSNFP (PSO and QAS) Root Cause Code

Root cause	Title	CY02	CY03	CY04	CY05
1	01-Procedures				
2	02-Personnel				
3	03-Management	2			
	TOTAL	**2**	**0**	**0**	**0**


NSNFP PSO & QAS Subject Code Distribution
Calendar Year 2005
Frequency
Cumulative %
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50%
40%
30%
20%
10%
0%
100%
90%
80%
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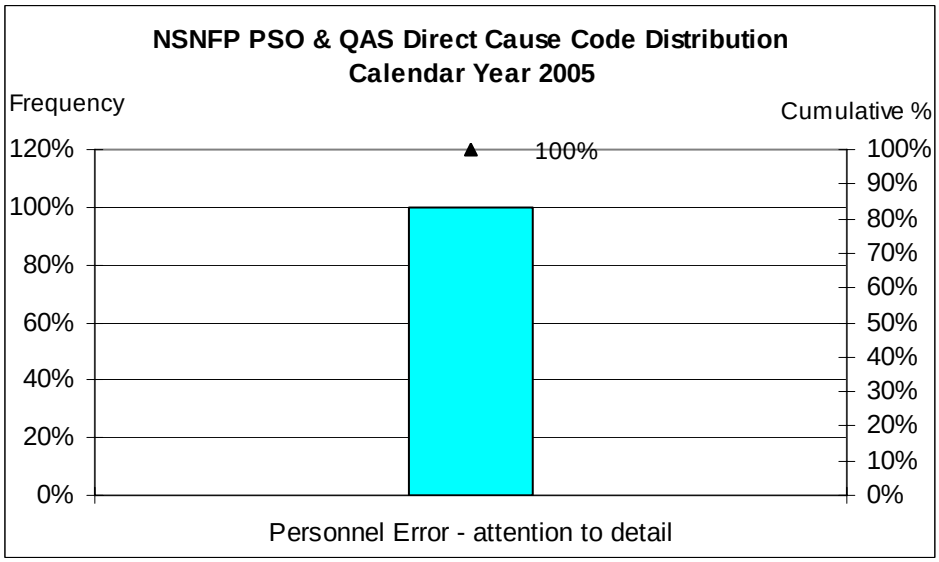
40%
30%
20%
10%
0%
100%
75%
50%
Audits
QA Program
Procurement


NSNFP PSO & QAS Direct Cause Code Distribution
Calendar Year 2005
Frequency
Cumulative %
120%
100%
80%
60%
40%
20%
0%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
100%
Personnel Error - attention to detail

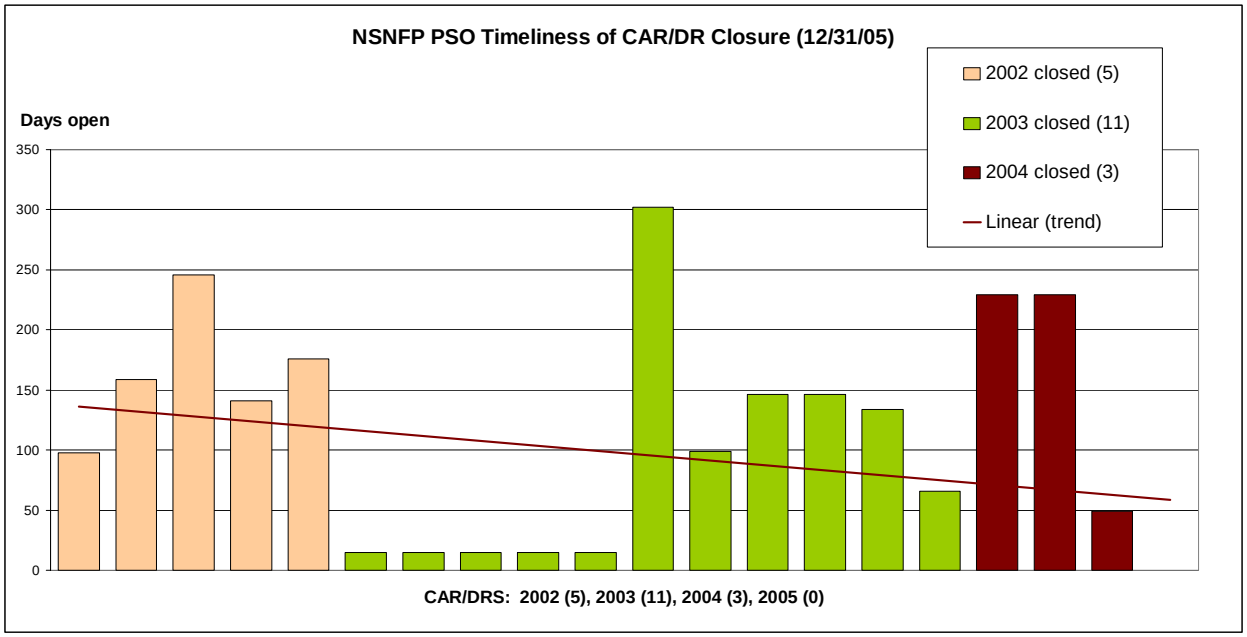
Appendix B

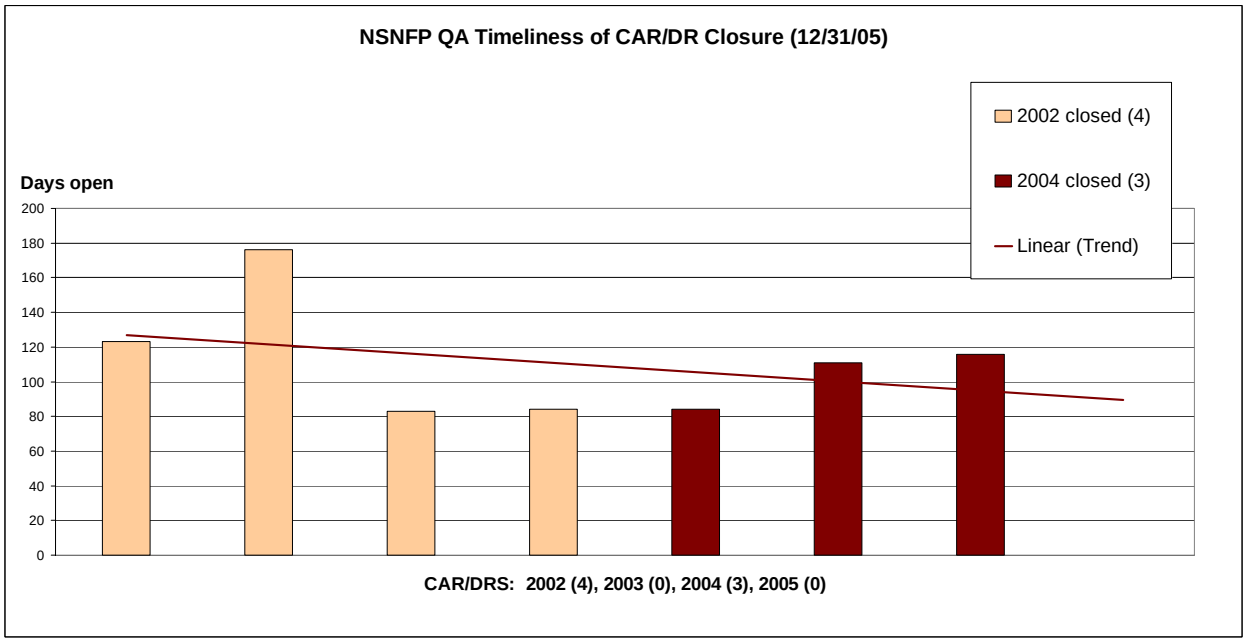
Timeliness of Deficiency Report Closure through December 31, 2005

Appendix B

Timeliness of Deficiency Report Closure through December 31, 2005

(Open reports are indicated in black; CDAs [corrected during audit] are not shown)





Appendix C

Deficiency Reports

Appendix C

Deficiency Reports
(Status December 21, 2005)

Report	Resp Org	Signif	Open	Subject	Direct	Root	Close	Days	Type
02-NSNF-AU-001-CDA-003	NSNFP QA	F	5/30/02	B.01.1	03 A		5/30/02	0	CDA
02-NSNF-AU-001-DR-001	NSNFP QA	F	5/30/02	A.03.2	01 C		9/30/02	123	DR
EM-ARC-02-10/ EM(0)-03-D-004	NSNFP QA	F	10/17/02	U.06.3.2	01 A a		4/11/03	176	DR
EM-ARC-02-10/ EM(0)-03-D-005	NSNFP QA	F	10/17/02	G.06.3.4	02 A d		1/8/03	83	DR
EM-ARC-02-10/ EM(0)-03-D-007	NSNFP QA	F	10/17/02	P.04.5.2	02 A d		1/9/03	84	DR
03-NSNF-S-001-CDA-001	NSNFP QA	F	12/6/02	B.12.1.2	02 A c		12/6/02	0	CDA
03-NSNF-S-005-CDA-001	NSNFP QA	F	5/7/03	Q.08.1.1	02 A b		5/7/03	0	CDA
04-NSNF-AU-001-CDA-002	NSNFP QA	F	3/8/04	B.12.2.4	02 A		3/8/04	0	CDA
04-NSNF-AU-001-CDA-001	NSNFP QA	F	3/9/04	B.10.7	02 A		3/9/04	0	CDA
04-NSNF-AU-001-DR-001	NSNFP QA	F	3/26/04	B.10.1	02 A a		7/15/04	111	DR
04-NSNF-AU-001-DR-002	NSNFP QA	F	3/26/04	Q.02	02 A b		6/18/04	84	DR
04-NSNF-AU-001-DR-003	NSNFP QA	F	3/26/04	E.05	02 A		7/20/04	116	DR
05-NSNF-AU-001-CDA-001	NSNF QA	F	02/11/05	B.06.2	02 A		02/11/05	0	CDA
05-NSNF-AU-001-CDA-002	NSNF QA	F	02/11/05	R.07.2	02 A		02/11/05	0	CDA
NSNFP(EM)-05-D-027	NSNF QA	F	03/03/05	R.06.6	02 A b		03/03/05	0	CDA
NSNFP(EM)-05-D-028	NSNF QA	F	03/03/05	G.09.5	02 A d		03/03/05	0	CDA
02-NSNF-AU-001-CAR-001	NSNFP	TRUE	5/30/02	G.02.1	01 C	03 A f	1/31/03	246	CAR
02-NSNF-AU-001-CDA-001	NSNFP	F	5/30/02	K.05.3	02 A b		5/30/02	0	CDA
02-NSNF-AU-001-CDA-002	NSNFP	F	5/30/02	E.05	01 C		5/30/02	0	CDA
02-NSNF-AU-001-DR-002	NSNFP	F	5/30/02	A.03.2.1	01 B		9/5/02	98	DR
02-NSNF-AU-001-DR-003	NSNFP	F	5/30/02	B.06	03 A		11/5/02	159	DR
02-NSNF-AU-001-CAR-002R1	NSNFP	TRUE	8/21/02	A.03.2.1	03 A d	03 A d	1/9/03	141	CAR
02-SUPP-S-006-CDA-001	NSNFP	F	10/8/02	F.05.3	02 A b		10/8/02	0	CDA
EM-ARC-02-10/ EM(0)-03-D-006	NSNFP	F	10/17/02	V.01.3	01 A a		4/11/03	176	DR
BQA-FS-03-04-DR-001	NSNFP	F	2/11/03	D.03.1	04 B e		2/26/03	15	DR
BQA-FS-03-04-DR-002	NSNFP	F	2/11/03	D.02.3	02 A		2/26/03	15	DR
BQA-FS-03-04-DR-003	NSNFP	F	2/11/03	E.03.3.1	01 B c		2/26/03	15	DR
BQA-FS-03-04-DR-004	NSNFP	F	2/11/03	B.05.6	02 A b		2/26/03	15	DR
BQA-FS-03-04-DR-005	NSNFP	F	2/11/03	B.05.4	01 B a		2/26/03	15	DR
03-NSNFP-07/09-DR-001	NSNFP	F	7/9/03	C.01.2	02 A d		5/6/04	302	DR
03-NSNFP-08/14-DR-001	NSNFP	F	8/14/03	F.05.3	03 A c		11/21/03	99	DR
03-NSNFP-10/09-DR-001	NSNFP	F	10/10/03	D.01.3	01 B d (2)		3/4/04	146	DR
03-SUPP-S-001-DR-001	NSNFP	F	10/10/03	B.12.1	03 B d		3/4/04	146	DR
03-NSNFP-10/22-DR-001	NSNFP	F	10/22/03	D.01.6	05 B a		3/4/04	134	DR
04-NSNF-S-001-DR-001	NSNFP	F	12/23/03	D.01.3	02 A d		2/27/04	66	DR
RW NSNF(EM)-04-D-024	NSNFP	F	5/21/04	B.01.3	01 B g (4)		1/5/2005	229	DR
RW NSNF(EM)-04-D-025	NSNFP	F	5/21/04	B.04.4	03 A c		1/5/2005	229	DR
04-NSNFP-5/13-DR-001	NSNFP	F	5/26/04	B.10.2	05 B b		7/14/04	49	DR
04-NSNF-S-003-CDA-001	NSNFP	F	6/17/04	E.05	02 A		6/17/04	0	CDA
04-SUPP-AU-001-CDA-001	NSNFP	F	7/28/04	I.02	04 C a		7/28/2004	0	CDA
05-NSNF-S-002-CDA-001	NSNFP	F	11/11/04	Q.02.1.2	02 A d		11/11/04	0	CDA
05-SUPP-AU-002-CDA-001	NSNFP	F	03/14/05	L.03.1.1	02 A d		03/14/05	0	CDA

Appenix C Legend

Report Identification of Deficiency Report (DR), Corrective Action Report (CAR), or Condition Corrected during Audit (CDA) report number.

Resp Org Organization responsible for correcting the condition.

NSNFP QA	National Spent Nuclear Fuel Program Quality Assurance Group
NSNFP PSO	National Spent Nuclear Fuel Program Support Organization

Signif Significant condition adverse to quality as defined by NSNFP Procedure 16.02.

Open Date of NSNFP Quality Assurance Staff Manager (QASM) approval for issuance.

Subject Subject code based on the QARD requirement violated.

Direct Direct cause code based on the direct cause of the condition identified in the report. Appendix D lists the cause codes used by NSNFP Procedure 16.03.

Root For CARs only: Root cause code based on the root cause of the condition identified in the report. Appendix D lists the cause codes used by NSNFP Procedure 16.03.

Close Date of NSNFP QASM approval for closure.

Days Duration in number of days the deficiency report remains open until verified as closed by the NSNFP QASM. This is computed as the difference between the open and closure dates.

Type Identifies the type of deficiency:
DR denotes a deficiency report for a condition adverse to quality
CAR denotes a significant condition adverse to quality
CDA denotes a condition corrected during the audit or surveillance.

Status The data analyses and trend charts were based on the status at the end of the calendar year.

Appendix D

Cause Codes

Appendix D—Cause Codes

Code	Description
01	PROCEDURES/IMPLEMENTING DOCUMENTS
01 A	Procedure not used
01 A a	No/incomplete documents/procedure
01 A b	Lost/missing documents/procedure
01 A c	Procedure difficult to use
01 A d	Procedure not available or inconvenient to use
01 A e	Procedure use not required but should be
01 B	Inadequate/wrong procedure
01 B a	Typographical error
01 B b	Sequence wrong
01 B c	Technical facts/data wrong
01 B d	Requirements:
01 B d (1)	updates not incorporated
01 B d (2)	not covered/addressed
01 B e	Wrong documents/procedure used
01 B f	Wrong revision used
01 B g	Implementing documents/process:
01 B g (1)	not adequate/can't be followed
01 B g (2)	Incomplete
01 B g (3)	does not exist
01 B g (4)	Does not describe HOW the requirement will be implemented
01 B h	Conflicting instructions
01 C	Error in following the procedure
01 C a	Format confusing
01 C b	More than one action per step
01 C c	Multiple references
01 C d	No signoff space
01 C e	Checklist misused
01 C f	Information/Data/Computation wrong or incomplete
01 C g	Ambiguous instructions
01 C h	Inadequate limits/parameters
01 D	Self imposed requirement - not needed for QARD compliance
02	PERSONNEL - HUMAN PERFORMANCE
02 A	Lack of attention to a task
02 A a	Carelessness
02 A b	Oversight
02 A c	Work overload
02 A d	Procedure not used, or used improperly
02 A e	Wrong revision used
02 A f	Lack of direction
02 B	Lack of Qualification
03	MANAGEMENT SYSTEM
03 A	Standards, Policies, Administrative Controls (SPAC)
03 A a	No SPAC
03 A b	SPAC not used
03 A c	Inadequate communication of SPAC
03 A d	SPAC Recently changed
03 A e	Inadequate drawings/prints
03 A f	Inadequate accountability
03 B	Immediate supervision
03 B a	Inadequate job/task analysis
03 B b	No preparation/planning
03 B c	Inadequate selection of performer(s)
03 B c (1)	Individual not qualified
03 B c (2)	Team selection not balanced/adequate
03 B d	Performers not trained
03 B e	No supervision during work
03 B f	Infrequent task
03 C	Communications
03 D	No/late communication
03 E	Misunderstood verbal communication
03 F	Audits/Evaluations
03 F a	No Audits/Evaluations
03 F b	Audit checklist misused
04	TRAINING
04 A	No training
04 A a	Decided not to train
04 A b	No learning objective
04 B	Lack of understanding
04 B a	Learning objectives need improvement
04 B b	Lesson plan need improvement
04 B c	Training instructions need improvement
04 B d	Testing need improvement
04 B e	Continued/Refresher training need improvement
04 C	Inadequate training methods
04 C a	Incomplete training
04 C b	Inadequate facilities
04 C c	Continuous training inadequate
04 C d	Inadequate testing or measure of aptitude
05	DESIGN/SCIENTIFIC INVESTIGATION
05 A	Design Documents/ Scientific Investigation
05 A a	Documents do not exist
05 A b	Data/computation wrong, incomplete, or less than adequate
05 A c	Requirements:
05 A c (1)	not identified
05 A c (2)	incorrectly identified
05 A d	Scientific investigation not performed per study plan
05 A e	Problems not anticipated in design or investigation
05 A f	Equipment environment not considered
05 B	Technical Review
05 B a	Review not performed
05 B b	Review inadequate
05 B c	Reviewer lack of independence
06	FABRICATION/INSTALLATION
06 A	Fabrication/installation
06 A a	Fabrication/installation error
06 A b	Fabrication/installation not per design
06 A c	Wrong sequence fabrication/installation
06 A d	Wrong material
06 A e	Defective material
06 A f	Lack of proper tools used for fabrication/installation
06 B	Quality Control
06 B a	No inspection
06 B b	Wrong inspection instructions
06 B c	Wrong inspection technique
07	RELIABILITY SYSTEM
07 A	Inadequate Preventative Maintenance
07 A a	No preventative maintenance for equipment
07 A b	Inadequate preventative maintenance for equipment
07 B	Unreliable Equipment
07 B a	Equipment past design lifetime
07 B b	Equipment repeated failure, previous corrective action inadequate
08	SOFTWARE
08 A	Computer software controls
08 A a	Inadequate software design
08 A b	Inadequate validation, verification or testing
08 A c	Defects:
08 A c (1)	Inadequate defect report
08 A c (2)	Inadequate defect resolution
08 A d	Inadequate software maintenance
08 A e	Inadequate software identification
08 B	Inadequate user information manuals
08 C	Inadequate control of usage
08 D	Inadequate data update
09	PROCUREMENT
09 A	Vendor not in the Approved Supplier List
09 B	Vendor not qualified
09 C	Receiving inspection
09 C a	No receiving inspection
09 C b	Inadequate Receiving inspection
10	MISCELLANEOUS OR MULTIPLE AREAS
10 A	Multiple Causes Present
10 B	Material/Equipment Inadequate
10 C	Unknown
10 D	Natural Causes
10 E	Planned Failure